UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,267	10/22/2003	Eric A. Shank	10030564-1	4937

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EXAMINER
KRAMSKAYA, MARINA

ART UNIT	PAPER NUMBER
2858	

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/691,267	SHANK ET AL.
	Examiner	Art Unit	
	Marina Kramskaya	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>22 October 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) ·

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/22/2003</u>.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1 & 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Clark et al., US 6,064,694, in view of Johnson et al., US 6,820,225.

As per Claim 1, Clark discloses a method for testing a frequency converter (FIG.

1: **14, 16**) comprising:

(a) preprogrammed labels for a plurality of mixing products (M_A-M_C) in the

automated controller **12**; and,

(b) in response to an automatic controller **12** selecting a first mixing product from

the plurality of mixing products, performing the following:

(b$_1$) calculating appropriate frequencies for the first mixing product (column

12, lines 63-65), and

(b$_2$) determining a measurement configuration (FIG. 5A-E, 6) for the first

mixing product (column 11, lines 16-20).

Clark does not disclose :

(a) displaying labels for a plurality of mixing products; and,

(b) a response to a user selected a first mixing product from the plurality of

mixing products.

Johnson discloses:

(a) displaying **10** labels for a plurality of mixing products; and,

(b) a response to a user selected (column 2, lines 66-67) a first mixing product

from the plurality of mixing products.

Therefore, it would have been obvious to a person of ordinary skill in the art to

include a display for user selection as taught by Johnson, rather that the automated

controller as taught by Clark, in order to have more user interaction and control to make

only the user selected calculations.

As per Claim 3, Clark further discloses the method as in claim 1 wherein (b_1)

includes using parameters for the frequency converter (column 12, lines 63-65).

As per Claim 4, Clark discloses the method as applied to Claim 1 above. Clark

further discloses the method as in claim 1 wherein (b_1) includes using parameters for

the frequency converter (column 12, lines 63-65).

Clark does not disclose a measurement parameters obtained from the user.

Johnson discloses a measurement parameters obtained from the user (column 2,

lines 66-67).

Therefore, it would have been obvious to a person of ordinary skill in the art to include measurement parameters obtained from the user, as taught by Johnson, in the testing method of Clark, in order to have more user interaction and control to make only the user selected calculations.

As per Claim 5, Clark further discloses additionally including the step of:

(b₃) sending commands to hardware to make measurements (by **10**, **12** to **24**).

As per Claim 6, Clark further discloses a method as in claim 5 wherein the hardware in (b3) includes tester hardware (**10**, **12**) and an external local oscillator **24**.

As per Claim 7, Clark further discloses a method as in claim 1 wherein in the plurality of mixing products include at least one of the following measurements:

1. Match Input (column 1, lines 47-48);

2. Match Output (column 1, lines 47-48);

3. Match local oscillator (LO);

4. Isolation In→Out;

5. Isolation LO→Out;

6. Isolation Out→In;

7. Isolation LO→In;

8. Isolation Out→LO;

9. Isolation In→LO;

10. Conversion Gain vs. Input Power;

11. Input Match verses Input Power;

12. Spur Table;

13. Image Rejection;

14. Swept Spur;

15. Conversion Gain;

16. Gain compression.

As per Claim 8, Clark discloses a method of testing as applied to Claim 1 above, including $1(b_2)$.

Clark does not disclose including the use of measurement parameters obtained from the user.

Johnson discloses including the use of measurement parameters obtained from the user (column 2, lines 66-67).

Therefore, it would have been obvious to a person of ordinary skill in the art to include measurement parameters obtained from the user, as taught by Johnson, in the testing method of Clark, in order to have more user interaction and control to make only the user selected calculations.

3.   Claims 2 & 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of Johnson, further in view of Blackham, US 6,396,285.

As per Claim 2, Clark in view of Johnson disclose a method of testing as applied to Claim 1 above,

Clark as modified does not disclose the step wherein in 1(a) the labels are obtained from a table defining the plurality of mixing products.

Blackham discloses obtaining the labels from a table defining the plurality of mixing products (TABLE 4).

Therefore, it would have been obvious to a person of ordinary skill in the art to include a table defining the plurality of mixing products as taught by Blackham, in the testing method of Clark, in order to have an organized list to increase usability.

As per Claims 9 & 15, Clark discloses an interface for a tester comprising:

a processor (FIG. 1: **10, 12**) that, in response to an automatic controller **12** selecting a first mixing product from the plurality of mixing products (column 12, lines 63-65), calculates appropriate frequencies for the first mixing product (column 12, lines 63-65), and determines a measurement configuration (FIG. 5A-E, 6) for the first mixing product (column 11, lines 16-20).

Clark does not disclose:

- a table that defines a plurality of mixing products, the table including labels for the plurality of mixing products;
- a first display interface that displays at least a subset of the labels;
- a user selecting from a plurality of mixing products.

Johnson discloses:

- a first display interface **10** that displays at least a subset of the labels;

- a user selecting from a plurality of mixing products (column 2, lines 66-67).

Blackham discloses:

a table that defines a plurality of mixing products, the table including labels for the plurality of mixing products (TABLE 4).

Therefore, it would have been obvious to a person of ordinary skill in the art to have the labels in a table format, as taught by Blackham, and a user selection option, as taught by Johnson, rather then the automated controller selection, as taught by Clark, in order to have more user interaction and control to make only the user selected calculations.

As per Claims 10 & 16, Clark further discloses an interface as in claims 9 & 15 wherein in the plurality of mixing products include at least one of the following measurements:

1. Match Input (column 1, lines 47-48);

2. Match Output (column 1, lines 47-48);

3. Match local oscillator (LO);

4. Isolation In→Out;

5. Isolation LO→Out;

6. Isolation Out→In;

7. Isolation LO→In;

8. Isolation Out→LO;

9. Isolation In→LO;

10. Conversion Gain vs. Input Power;

11. Input Match verses Input Power;

12. Spur Table;

13. Image Rejection;

14. Swept Spur;

15. Conversion Gain;

16. Gain compression.

As per Claim 11 & 17, Clark as modified discloses an interface as applied to

Claims 9 & 15 above. Clark further discusses determining a measurement configuration

(FIG. 5A-E, 6) for the first mixing product, wherein the processor uses measurement

parameters preprogrammed in the controller.

Clark does not disclose user input parameters.

Johnson discloses user input parameters (column 2, lines 66-67)..

Therefore, it would have been obvious to a person of ordinary skill in the art to

include user input parameters as taught by Johnson, in the automatically controlled

interface of Clark, in order to allow the user control over the calculations and

measurements.

As per Claims 12 & 18, Clark further discloses, when calculating appropriate frequencies (column 12, lines 63-65) for the first mixing product M_A, the processor uses parameters for the frequency converter (column 11, line 17).

As per Claims 13 & 19, Clark as modified discloses an interface as applied to Claims 9 & 15 above. Clark further discloses, when calculating appropriate frequencies (column 12, lines 63-65) for the first mixing product, the processor uses parameters for the frequency converter (column 11, line 17).

Clark does not disclose using measurement parameters obtained from the user.

Johnson discloses using measurement parameters obtained from the user.

Therefore, it would have been obvious to a person of ordinary skill in the art to include user obtained measurement parameters, as taught by Johnson, in the interface of Clark, in order to allow the user more control over the interface operation.

As per Claims 14 & 20, Clark further discloses an interface wherein the processor (**10, 12**) sends commands to tester hardware (LO **24)** to make measurements.

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kapetanic, US 6,529,844, discloses a testing system including a local oscillator and ports for a DUT which can be a frequency converter. Bradley, US

5,642,039, discloses a testing system for frequency converters, including a user interface with a display screen.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Kramskaya whose telephone number is (571)272-2146. The examiner can normally be reached on M-F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (571)272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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